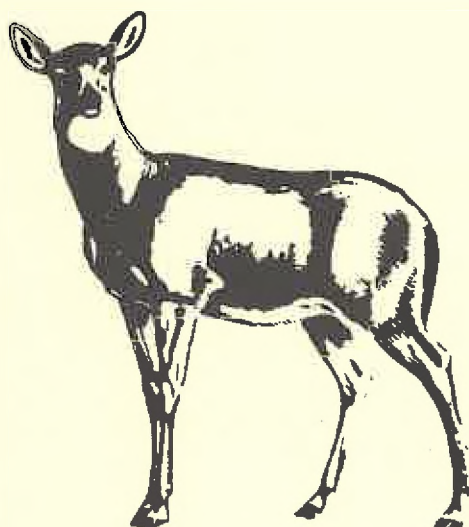


HUNTERS' ASSESSMENT OF THE DEER MANAGEMENT PERMIT SYSTEM IN NEW YORK STATE

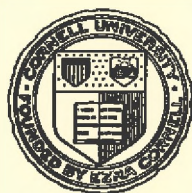
by

Daniel J. Decker and Nancy A. Connelly



HDRU Series No. 88-8

September 1988



Human Dimensions Research Unit
Department of Natural Resources
New York State College of Agriculture and Life Sciences
A Statutory College of the State University
Cornell University, Ithaca, N. Y.



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HUNTERS' ASSESSEMENT OF THE DEER MANAGEMENT PERMIT SYSTEM IN NEW YORK STATE

INTRODUCTION

The fundamental mechanism of deer management in New York State is the Deer Management Permit (DMP) System. The system is based on allocation of permits allowing the hunter to harvest a deer of either sex in addition to the 1 buck allowed with a regular big game hunting license. DMP quotas are established for geographic areas known as Deer Management Units (DMUs) based on estimates of deer population levels vis-a-vis population objectives for particular DMUs. Hunters apply for permits annually, choosing the DMU where they would like to hunt, and are selected through a randomized computer-based lottery system.

Hunters' participation in the DMP system is important to the effectiveness of deer management in New York. Without the harvest of adult female deer through recreational hunting, deer populations cannot be regulated effectively on a statewide basis. It is necessary for deer hunters to participate by applying for and successfully using DMPs. Both lack of applicants and low harvest rates by DMP holders can diminish the effectiveness of deer management. These have become increasingly pertinent concerns of deer biologists in the New York State Department of Environmental Conservation (DEC) as deer herds statewide have grown, in some DMUs to levels significantly above the optimum deer population level objectives established by DEC.¹

¹For more details on the DMP system and deer management situation in New York, refer to "New York State 1987 Deer Management Update", NYSDEC, Division of Fish and Wildlife.

The purpose of this study was to assist DEC's evaluation of the DMP system by obtaining hunters' assessments of the DMP system in New York. The Human Dimensions Research Unit (HDRU), Department of Natural Resources, Cornell University, developed a survey to solicit information about hunters' views and use of DMPs. We also identified the elements of deer-hunting satisfaction for DMP applicants to assess the degree to which the DMP system, particularly the greater hunting opportunity it affords, adds to or, possibly, detracts from their enjoyment of deer hunting.

METHODS

A statewide sample of 1,000 New York resident recipients of a 1987 Deer Management Permit was systematically selected from the DEC file of approximately 340,000 recipients. Recipient name, address, year of birth, and DMU for which a DMP was received were recorded for each member of the sample.

A mail questionnaire² was sent to each member of the sample. The questionnaire sought information on days of participation in deer hunting in 1987, hunting success, use of DMP, attitudes toward DMP system, importance of components of deer hunting experience, satisfaction with 1987 deer hunting, and selected demographic questions. The questionnaires were first mailed by the HDRU on 15 April 1988. Up to 3 follow-ups were sent to nonrespondents at 7- to 10-day intervals through mid-May.

Responses were coded and statistical analysis was conducted by HDRU staff using the Statistical Package for the Social Sciences computer program (SPSS, Inc. 1986).

²A copy of the questionnaire and cover letters used in this study can be obtained from the authors upon request.

A telephone follow-up of 30 nonrespondents to the mail survey was conducted in early August 1988. The sample size was modest due to budgetary and time constraints; however, the nonrespondents contacted were similar to respondents on most variables examined. A brief discussion of the nonrespondent follow-up data analysis is provided at the end of the "Results and Discussion" section.

RESULTS AND DISCUSSION

The initial sample size of 1,000 resulted in 8 undeliverable questionnaires and 733 codeable returns (74% of the deliverable questionnaires). The low number of undeliverable questionnaires (<1%) is quite unusual in survey research, attesting to the currency of addresses provided by DEC for this study.

DMP Recipients' Background

Demographic Characteristics. Ninety-five percent of the respondents were male, a higher percentage than the general population of deer hunters as identified in other studies (e.g., 88.7% reported in USFWS 1982 [New York Section]). Respondents averaged 42.6 years of age (males - \bar{x} = 42.6 years; females - \bar{x} = 41.2 years), and reflected closely the age distribution of the sample of DMP recipients randomly drawn for this survey (Table 1). Respondents, and therefore DMP recipients, tended to be older than the big game hunter population of New York State; a 1980 study of big game hunters in New York identified 52% under 35 years of age (USFWS 1982 [New York Section]), whereas only 33% of responding DMP recipients were under 35. We are not aware of any reason why DMP

Table 1. Age distributions of survey respondents, DMP recipient sample, and 1980 New York State big game hunters.

<u>Age</u>	<u>Survey Respondents (n=732)</u>	<u>DMP Recipient Sample (n=1,000) Percent</u>	<u>1980 NYS Big Game Hunters^a</u>
16-24	11	13	23
25-34	22	24	29
35-44	25	24	16
45-54	21	19	14
55-64	12	11	12
65+	<u>9</u>	<u>9</u>	<u>6</u>
	100%	100%	100%

^aSource: USFWS. 1982. 1980 National Survey of Fishing, Hunting, and Wildlife-Associated Recreation: New York. U.S. Govt. Printing Office: Wash., D.C. 79 pp.

recipients would be, on average, an older group of hunters but that does appear to be the case.

DMP recipients lived in New York State an average of 38.6 years. Most lived in rural areas at the time of the survey, either rural village (32%) or other rural situations (30%). About 25% considered the area in which they lived to be suburban and another 12% lived in urban areas. These are similar to percentages reported in the 1980 study of big game hunters (66%, 29%, and 5% respectively) (USFWS 1982 [New York Section]). Forty percent of respondents were blue-collar workers, 3% were farmers, 2% were homemakers, 26% were in white-collar jobs, and 29% were in various other occupational categories.

Long-term Deer Hunting Involvement. DMP recipients as a group had been hunting deer in New York for 20.9 years, which was longer than other samples of deer hunters we have studied (e.g., 17 years hunting experience for Northern Zone big game hunters [Smolka et al. 1983]). This finding is consistent with the older average age of respondents reported above. Only about 1 out of 5 DMP recipients had hunted deer fewer than 10 years; over half had hunted deer 20 or more years and over one-quarter had hunted deer 30 or more years. About half of the DMP recipients began hunting deer at age 16 or younger (not necessarily in New York State), and about 75% began hunting deer by age 20; fewer than 10% began at age 30 or older. Most DMP recipients (85%) had hunted small game or waterfowl before they began deer hunting.

DMP Recipients' 1987 Deer Hunting Season Experiences

DMP recipients were active deer hunters in 1987; about 98% hunted deer that season. Respondents averaged 12.8 days afield in 1987; 9.3 days of which were during the regular gun season. Most who were active hunted during the regular gun season (99%), and a sizable group (32%) also hunted during the bow and arrow season. Few participated in the primitive weapons hunts in wilderness areas of northern New York (4%) or in the post-season hunt in southern New York (3%).

Hunting success was high among DMP recipients (though not limited to DMP tagged deer). Fifty percent harvested at least 1 deer in 1987 during 1 of the hunting seasons available. Among successful hunters, 47% shot 1 adult buck and 10% shot 2 adult bucks; 51% shot 1 adult doe and 1% shot 2; 9% shot 1 fawn and less than 1% shot 2.

DMP Recipients' DMP Experience in 1987

Some recall error by respondents was evident. Although the sample was drawn from applicants who received a DMP, 1.5% reportedly did not apply for a DMP in 1987 and among those who did apply, 1.3% reportedly did not receive a permit. A similar type of recall error was found for 16% of respondents who reported having applied to a different DMU than DEC records indicated.

People expressed a variety of, and often multiple, reasons for their interest in receiving a DMP. These ranged from wanting to improve chances of harvesting at least 1 deer (69%), to extending their opportunity to be afield (after a buck is taken) (41%), to "preventing others from getting a permit and shooting does" (<1%). The most important reason by far was to increase one's chances of taking at least 1 deer during the 1987 season; about 51% of respondents expressed this as their most important motive.

Respondents reported devoting an average of 5.7 days afield entirely to hunting deer under their DMP. Thus, for 1987, respondents attributed 44% of their overall deer hunting effort (i.e., 5.7 out of 12.8 days afield) and 61% of their effort during the regular gun season (i.e., 5.7 out of 9.3 days afield) to their use of the DMP. Although use of the DMP ranged from 0 days (10%) to the entire season (1%), about half used their DMP 4 or fewer days and only 15% used their DMP more than 10 days.

About 38% of respondents used their DMP to tag a deer in 1987. (This success rate with DMPs was slightly higher than that for all DMP recipients in 1987, which was 32%.) The majority of the harvest reported was adult does (62%). The rest of the harvest under the permit was reported as follows: adult bucks-21%, fawn bucks-13%, fawn does-4%. Comparisons of successful vs. unsuccessful hunters revealed no significant

differences in days afield using a DMP; this pertained whether success was examined generally (i.e., deer taken using buck tag or DMP) (5.8 vs. 5.7 days afield) or as success for filling a DMP specifically (5.8 vs. 5.7 days afield).

Most DMP recipients were serious about using the permit to shoot a deer (Table 2). As a group, their intentions of doing so both at the time of application and during the 1987 deer hunting season indicate that two-thirds were "very serious" and another one-fifth to one-quarter were "moderately serious" about shooting a deer using the permit. Furthermore, only a few recipients indicated that their intentions to use a DMP had changed from the time of application to their actual participation in the 1987 season (Table 3). Typically, most of those who reported a change became more serious about using the DMP once it was in hand and the opportunity to use it was before them. Nevertheless, we found little difference in harvest success between those not too serious (30% successful), moderately serious (38% successful) or very serious (39%

Table 2. DMP recipients' intentions of shooting a deer using a permit at the time of application and during the deer hunting season.

Intentions about shooting a deer using the permit	At the time of application (n=692)	During deer hunting season (n=688)
	Percent	
No intention	1.3	1.6
Not too serious	7.4	7.7
Moderately serious	24.0	22.2
Very serious	<u>67.3</u>	<u>68.5</u>
	100.0	100.0

Table 3. Change in DMP recipients' intentions of using the permit to shoot at deer at the time of application vs. during the hunting season.

Intentions of using the permit at time applied	Intentions of using permit during the deer hunting season				Total	n
	No	Not too	Moderately	Very		
	<u>intention</u>	<u>serious</u>	<u>serious</u>	<u>serious</u>		
	Percent					
No intention	77.8	22.2	0.0	0.0	100.0	9
Not too serious	4.2	81.2	8.3	6.3	100.0	48
Moderately serious	0.6	5.4	83.8	10.2	100.0	166
Very serious	0.2	0.6	2.2	97.0	100.0	463

successful) about taking a deer using a DMP. Hunters who had no intention (i.e., did not have use of the DMP as a goal) of taking a deer were markedly less successful (18%).

Considering DEC's concern about low harvest success of DMP recipients, it is noteworthy that despite their desire to use the DMP, 70% of permit recipients reportedly passed up shots at deer during the 1987 season, some getting other opportunities afterward, others not. During 1987, about 42% of DMP recipients who passed up a shot later tagged a deer using the DMP, compared to about 28% of those recipients who did not pass up a shot ($X^2=12.37$, $df=1$, $p \leq .05$). This indicates that those who pass up shots are, as a group, ultimately more successful. Overall, however, 41% of DMP recipients passed up a shot and did not eventually use their DMP; this percentage was slightly greater than that of DMP users who successfully used their permits to tag a deer (38%). Thus, assuming that

those who passed up a shot could have harvested a deer, the deer take for DMP recipients could have been double that actually experienced had opportunities to shoot deer been taken.

Nearly half of DMP recipients passed up an opportunity to shoot a small deer, over one-third wanted a better shot than was presented, one-fifth had their opportunity come too early in the season (i.e., they wanted to extend their opportunity to be afield), and one-eighth passed up shots at antlerless deer because they were holding out for a chance to shoot a buck (Table 4). These findings may be indicating the need for an educational program to help hunters understand the management implications of not harvesting a deer when in possession of a DMP.

Most 1987 DMP recipients (92%) had applied for a permit during at least 1 of the previous 4 years (1983-1986). However, over 17% of 1987

Table 4. DMP recipients' reasons for passing up an opportunity to shoot an antlerless deer during the 1987 season (n=484).

<u>Reasons</u>	<u>Percent^a</u>
Deer too small	48.3
Wanted a better shot	36.2
Too early in the season	22.5
Wanted to shoot a buck	13.4
Wanted better location/situation	11.0
Weather too warm	6.2
Won't shoot doe or doe with fawns	3.9

^aPercentages total more than 100% because respondents could check more than 1 reason.

DMP recipients who had been eligible to apply for a DMP in 1986 did not do so. Among 1987 DMP recipients who were eligible to apply for DMPs in each year from 1983-87 (i.e., they had been deer hunting since 1983), we found the frequency of DMP applications shown in Table 5. Results indicate that the majority (61.5%) of 1987 recipients who could have applied for a DMP every year since 1983 had done so. The extent of consecutive applications for 1987 recipients, using 1987 as the common anchor point, is illustrated in Table 6. These data demonstrate a relatively high degree of consistency in DMP application behavior among this group of hunters. Unfortunately, the scope of this study, restricted to DMP recipients, does not shed any light on why many hunters never apply for a DMP.

DMP recipients also demonstrated a moderate degree of fidelity to geographic areas. About 44% have applied for a DMP for the same DMU (or area when DMU numbers have been changed by DEC) for each of the last 5 years (1983-87) (Table 6). Consecutive years of applying for the same DMU, from 1987 back, are shown in Table 6. These data indicate that about

Table 5. Frequency of DMP application, 1983-1987, for 1987 DMP recipients (n=715).

	<u>Percent</u>	<u>Cumulative %</u>
5 out of 5 years	61.5	61.5
4 out of 5 years	7.7	69.2
3 out of 5 years	8.1	77.3
2 out of 5 years	6.0	83.3
1 out of 5 years	<u>16.7</u>	100.0
	100.0	

Table 6. Extent of consecutive years of DMP applications for the same DMU, using 1987 as an anchor, for 1987 DMP recipients (n=715).

	<u>DMP Application</u>		<u>DMU Fidelity</u>
	<u>%</u>	<u>Cumulative %</u>	<u>Cumulative %</u>
1983-87 (5 years)	61.5	61.5	43.9
1984-87 (4 years)	4.2	65.7	48.1
1985-87 (3 years)	6.2	71.9	56.6
1986-87 (2 years)	6.4	78.3	67.5
1987 (1 year)	21.7	100.0	100.0

one-third of 1987 DMP recipients applied for a different DMU in 1987 than they did in 1986, suggesting that although a large proportion of people (44%) are very faithful to a DMU, another significant proportion (33%) may be more suited to efforts to redistribute hunting pressure. More detailed study of this topic is required for hunters on a DMU-by-DMU basis, however, before conclusions on the potential for effective redistribution of demand can be assessed with confidence.

Reasons given by DMP recipients for not applying for a permit indicated that seldom was some aspect of the mechanics of applying for the DMP cited as the most important reason for not applying for one (i.e., cost-0%, application procedure-2%, and brief duration of application period-6%). Most common (20%) was the response "not enough time to hunt", which is not specific to the DMP per se. About 12% of the people who had not applied during 1 of the previous 4 years expressed lack of confidence in the DMP system by responding they had concerns about overharvest of deer (8%) or held personal convictions against shooting antlerless deer

(4%). One-out-of-ten were dissuaded from applying because they thought they had little chance of receiving a DMP. Few (8%) simply did not want an extra deer in the particular year(s) of nonapplication. (See Appendix A-1 for list of reasons reported and frequency of mention.)

Overall interest in shooting deer using a DMP has remained unchanged for the majority (61%) of 1987 DMP recipients over the past 5 years. Among those reporting a change, more expressed greater interest (24%) than less interest (15%). Reasons for a change in interest were diverse. Concern about overharvest was most prevalent (26%), personal reasons unrelated to deer management (health, age, time needed for job and family) were less common (20%), and even fewer were concerned about underharvest (9%). Some people (18%) indicated greater interest because they enjoy the benefits of hunting (e.g., meat, outdoor experience). Access problems or fear of personal safety were infrequently mentioned reasons for diminished interest in DMP use. (Note: It is important to keep in mind that these data were for 1987 DMP users and can not be generalized to the entire population of DMP users in previous years or to the entire deer hunter population of any year, including 1987.)

DMP Recipients' Satisfaction with Hunting and Deer Management

1987 DMP recipients as a group were generally satisfied with their 1987 deer hunting experience. About 60% indicated they were satisfied, 26% extremely so. About 23% were neutral -- not really satisfied nor dissatisfied -- and 17% were definitely dissatisfied. As might be expected, DMP recipients who were successful in bagging a deer during the 1987 season tended to be more satisfied than those who were unsuccessful.

A majority of 1987 DMP recipients was generally satisfied (56%) with DEC's deer management system in the Southern Zone; 10% were dissatisfied and 34% had mixed feelings. The predominant reason for lack of satisfaction was concern about overharvest of deer, including lack of faith in DEC's data on deer population levels. Nevertheless, the DMP system received "good" to "excellent" ratings from three-fourths of all respondents both as a deer management tool and as a way to provide recreational hunting opportunities (Table 7). In fact, the majority of respondents (62%) had no changes to suggest in the DMP system. Suggestions for changes ranged from "issue fewer permits" to "issue more permits" (Appendix A-2).

DMP recipients' opinions of the DMP system as a deer management tool and as a mechanism to provide recreational hunting opportunities were strongly related to their expressed level of satisfaction with deer management in the Southern Zone (Table 8). People who rated the DMP system as good or excellent as a management tool or mechanism for

Table 7. DMP recipients' rating of DMP system as a deer management tool and as a way to provide hunting opportunity.

<u>Rating of DMP system</u>	<u>As a deer management tool (n=686)</u>	<u>As a way to provide hunting opportunity (n=676)</u>
	<u>Percent</u>	
Excellent	27.1	29.4
Good	45.9	45.7
Fair	16.6	14.6
Poor	6.7	5.0
No opinion	3.6	5.2

Table 8. DMP recipients' rating of DMP system compared with their satisfaction with Southern Zone deer management.

<u>Rating of DMP system</u>	<u>Satisfaction with Southern Zone Deer Management System</u>			<u>Total</u>	<u>n</u>
	<u>Generally</u>	<u>Mixed</u>	<u>Generally</u>		
	<u>satisfied</u>	<u>feelings</u>	<u>dissatisfied</u>		
	<u>Percent</u>				
<u>As a deer management tool</u>					
Excellent	79.3	18.5	2.2	100.0	184
Good	64.5	30.3	5.2	100.0	307
Fair	25.4	60.6	14.0	100.0	114
Poor	9.1	34.1	56.8	100.0	44
No opinion	32.0	44.0	24.0	100.0	25
<u>As a way to provide hunting opportunity</u>					
Excellent	72.2	22.2	5.6	100.0	198
Good	61.0	31.1	7.9	100.0	302
Fair	33.3	52.6	14.1	100.0	99
Poor	30.3	39.4	30.3	100.0	33
No opinion	33.3	45.5	21.2	100.0	33

providing recreation opportunity were much more likely than those who rated it poor or fair to be satisfied with deer management in the Southern Zone.

DMP Recipients' Opinions About Multiple DMPs

The notion of issuing a second DMP to hunters when harvest quotas and hunter response/success in DMUs warrant such a strategy was presented to DMP recipients surveyed. Although only about one-third had shot a deer

using the DMP in 1987, half of the respondents (51%) expressed an interest in obtaining a second DMP when the deer management situation called for it, and another 15% were not sure whether they would be interested. People who were successful in taking a deer under a DMP in 1987 were no more likely than those who were unsuccessful to express interest or disinterest in a second DMP possibility. About one-third of the respondents (34%) indicated they would have no interest in a second DMP. Concerns about overharvest prevailed among reasons for a negative response. Other commonly expressed sentiments were that 2 deer per season (regular license and 1 DMP) were enough (28%) and that a second DMP would result in more meat than could be consumed (22%). There were no statistically significant differences in levels of interest in a second DMP between rural vs. suburban vs. urban residents.

DMP Recipients' Concerns About Overharvest and Deer Population Levels

Responses to several questions indicated that a substantial percentage of respondents had some concerns about the deer population size and about DEC's knowledge of deer populations vis-a-vis harvest goals, particularly as reflected in DMP quotas. To obtain a singular indication of this type of concern we categorized respondents based on their expressed concern about harvest levels and the integrity of the deer population. About 45% gave no indication of concern about the deer population size, only 2% indicated there were too many deer, 21% indicated the population size was about right, and 32% expressed concern that there were too few deer. Relatively high frequencies of concern were evident in a few DMUs of the central Catskills and western New York.

People who were concerned that the population of deer may be too low differed from those with other opinions in that they: (1) lived in rural areas; (2) were much less likely to have interest in a second DMP; and (3) were less satisfied with deer management in the Southern Zone. They did not differ, however, in degree of satisfaction with their deer hunting experiences in 1987 nor in their success in harvesting a deer.

DMP Recipients' Deer Hunting Satisfaction

Elements of deer hunting satisfaction were examined for 1987 DMP recipients using a scale containing 15 items that had been developed by HDRU for previous studies (Table 9). Five items were identified as being of greatest importance to deer hunting satisfaction:

- Getting outdoors for a chance to enjoy the natural environment.
- Seeing deer or deer signs.
- Getting away from everyday problems and having a chance to relax.
- Using skills such as stalking and tracking.
- Getting shots at deer.

This list of top satisfactions has 2 dimensions, 1 relating to particular aspects unique to deer hunting -- hunting skills, finding deer sign, and getting shots. The other is less hunting specific and more related to the general outdoor experience. DMPs may contribute to all of these first-order satisfactions. For example, the finding reported earlier that the DMPs led to 44% greater time afield means more opportunity to enjoy the outdoors. In addition, the improved chance of getting shots at deer and using hunting skills in efforts to fill the DMP also may contribute significantly to hunting satisfaction.

Table 9. Importance of components of deer hunting enjoyment to DMP recipients.

<u>Components of deer hunting enjoyment (satisfactions and dissatisfactions)</u>	<u>Mean Score^a</u>	<u>n</u>
First-Order Satisfactions		
Getting outdoors for a chance to enjoy the natural environment	3.6	674
Seeing deer or deer signs	3.5	677
Getting away from everyday problems and having a chance to relax	3.2	680
Using skills such as stalking and tracking	2.8	668
Getting shots at deer	2.7	674
Second-Order Satisfactions		
Companionship of family/relatives during the hunt	2.4	676
Being with hunting companions	2.3	676
Putting "meat in the freezer"	2.1	678
Having an opportunity to use my hunting equipment	2.0	671
Hunting close to home	1.9	676
Showing my family and friends a trophy deer I shot	1.8	671
Having to obey hunting regulations	1.5	670
Dissatisfactions		
Traveling a long distance from home to reach a hunting area	-0.7	674
Hearing shots and voices of hunters other than those in my group	-1.9	669
Seeing many hunters (other than those in my group)	-2.1	674

^aBased on a scale where: 4-greatly adds to deer hunting enjoyment;
0-neutral; -4-greatly detracts from deer hunting enjoyment.

A set of second-order satisfactions in deer hunting included 1 component in particular to which the DMP opportunity contributes notably: "putting meat in the freezer". Also included in this group of hunting satisfactions were components related to companionship with friends and family. In addition, having the opportunity to hunt close to home added to hunting enjoyment, thereby indicating the desire of many hunters to apply for DMPs near their homes and explaining the site fidelity reported earlier.

Seeing or hearing voices and shots of hunters outside an individual's own group and long travel distances to hunting areas generally detracted from hunting enjoyment.

Thus, to the extent that the DMP allows an individual more time afield hunting and increases the opportunity to harvest a deer, the DMP likely enhances deer hunting enjoyment. On the other hand, to the extent that this added opportunity results in greater chances of nonaffiliated group contact, visually or audibly, and requires travel to hunting sites, it may lead to dissatisfaction. The respondents' positive response to the role of the DMP system in providing recreational hunting opportunity suggests that on balance the DMP adds to hunting enjoyment of most deer hunters. That is, they don't obtain permits just to put meat in the freezer or because a harvest of antlerless deer is deemed necessary to meet management objectives established by DEC. DMPs contribute to realizing a range of satisfactions for deer hunters.

Nonrespondent Follow-up

A sample of 30 nonrespondents to the mail survey was contacted by telephone. These people were asked a few key questions about their deer hunting participation in 1987 and their opinions about the DMP and its use (Table 10). Like respondents, nonrespondents were active hunters in 1987. In fact, all 30 nonrespondents contacted hunted deer in 1987, over one-third shot a deer during 1987 and one-quarter used their DMPs to tag a deer. Although the success rates are lower among the nonrespondents sampled vs. respondents, the differences are not large. It is noteworthy that the average days afield hunting was lower for nonrespondents than respondents, whether the referent is overall deer hunting or just the portion attributable to DMP use (though the difference was only about 1 day for DMP use). The percentage of total days afield contributed by use of the DMP was similar for both nonrespondents (72%) and respondents (61%).

Nonrespondents as a group were similar to respondents in that the vast majority were moderately to very serious about using the DMP both at the time they applied for it and during the 1987 hunting season. The most important reason for applying for a DMP given most frequently by nonrespondents was to "increase the chance of taking at least 1 deer", the same reason that was indicated as being most important by respondents. Nearly identical percentages of nonrespondents vs. respondents (50.0 vs. 50.7%) expressed an interest in using a second DMP in situations where such measures were needed to manage the deer population.

Overall, nonrespondents are similar in most respects to respondents. Consequently, no adjustments in reported frequencies, means, etc. of respondent data were made because of nonresponse bias.

Table 10. Comparisons of nonrespondents and respondents for selected variables.

	Nonrespondents (n=30)	Respondents (n=733)
	Percent	
Did you hunt deer in New York State in 1987?		
Yes	100.0	97.8
No	0.0	2.2
Days hunted during regular gun season?		
Mean*	6.33 days	9.29 days
Shoot a deer?		
Yes	34.5	49.8
No	65.5	50.2
Days hunt primarily with DMP?		
Mean	4.55 days	5.67 days
% of total days afield	72	61
Tag a deer using DMP?		
Yes	25.0	37.7
No	75.0	62.3
How serious were you about using the permit at time applied?		
No intention	3.6	1.3
Not too serious	17.8	7.4
Moderately serious	21.4	24.0
Very serious	57.2	67.3

Table 10. Continued

	Nonrespondents (n=30)	Respondents (n=733)
	Percent	
How serious were you about using the permit during hunting season?		
No intention	3.7	1.6
Not too serious	14.8	7.7
Moderately serious	22.2	22.2
Very serious	59.3	68.5
Most important reason for applying for DMP?		
Increase chances of taking at least 1 deer	39.3	50.8
Take an additional deer after filling buck tag	7.1	10.6
Take antlerless deer if no buck	10.7	18.0
Hunt with friends and family after filling buck tag	17.8	12.7
Other	25.1	7.9
Interest in obtaining more than 1 DMP in a year?		
Yes	50.0	50.7
Not sure	10.0	15.5
No	40.0	33.8

*A statistically significant difference in the number of days hunted was found between nonrespondents and respondents ($t=4.05$, $p \leq .05$).

SUMMARY AND IMPLICATIONS

A survey of 1987 DMP recipients indicated that most were satisfied with deer management in southern New York generally and with the DMP system specifically. Most intended to hunt with the DMP at the time of application and followed through by actually doing so. In fact, the majority of their hunting time afield during the regular gun season was attributed to use of the DMP. About half of 1987 DMP recipients were successful in taking a deer during 1987; 38% tagged a deer using the DMP.

Respondents were fairly consistent in their use of DMPs; 61% applied for a DMP for each year of the 1983-87 5-year period. Fidelity to a DMU was moderate, with 44% reporting they applied for the same area for each year of the 5-year period. Reasons for not applying during 1 or more of the previous 4 years indicated that the cost, application procedure, or brief duration of the application period were of little consequence. Although a range of specific reasons were given by low percentages of respondents, "not enough time to hunt" was cited most often. About 12% had concerns about overharvest of deer or killing of does and fawns. Interest in the DMP system changed little among respondents over the past 5 years; most of those who indicated a change had become more interested in shooting a deer under the DMP. About half of the respondents would be interested in a second DMP in years when the situation called for this measure. Nevertheless, a strong undercurrent of concern about overharvest of deer was evident among respondents. Thus, the need for second permits (i.e., greater harvest) would have to be communicated effectively -- hunters will need to understand why greater harvest of antlerless deer is called for or else they likely will not support the measure.

The findings of this study, though limited in being restricted to DMP recipients, provide several insights for deer managers. By and large, support for the DMP system is strong. Hunters seem willing to participate, even to the extent of multiple DMP use, as long as they are convinced overharvest of the deer population is not possible, suggesting that an educational effort regarding the DMP system and use of DMPs may be needed. DMPs likely are adding to the overall recreational value of the deer resource by substantially increasing the amount of time DMP holders are spending afield. DMP recipients' expressed desire to hunt close to home together with their fairly strong DMU fidelity over time indicate a barrier to promoting and effecting shifts in hunting pressure from one area to another. Hunters will need to understand the basis for DMP quotas and accept their role in deer management beyond their own personal recreational enjoyment of the activity. Developing this kind of understanding and sense of management responsibility will require effective education, beginning but not ending with the mandated hunter education course. Continuing education of hunters throughout their hunting "careers" seems to be in order. Considering the dynamic nature of deer management and the changing habitat and human land-use situations affecting deer management, hunters will need to be kept up to date through effective communication.

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APPENDIX A

<u>Table</u>	<u>Title</u>	<u>Page</u>
A-1	Reasons for not applying for a DMP in 1 or more years from 1983 to 1986	26
A-2	Changes to the DMP System suggested by respondents . . .	27

Table A-1. Reasons for not applying for a DMP in 1 or more years from 1983 to 1986.

<u>Reasons for not applying</u>	Given as a reason* (n=201)	Most important reason (n=185)
	<u>%</u>	
Not enough time to hunt	25.9	19.5
Did not get around to it	30.8	15.1
Did not think chances of getting a permit were good	18.9	9.7
Concerned about overharvest	12.4	8.1
Did not need or want an extra deer	10.4	7.6
Application period too short	7.5	5.9
Hunted exclusively in the Northern Zone	6.0	4.3
Not old enough	7.0	3.8
Don't believe antlerless deer should be shot	4.0	2.7
Health/personal	3.0	2.2
Away from the area	3.5	2.2
Application procedure too complicated	3.0	1.6
First time hunting	2.5	1.6
Friends and family do not believe antlerless deer should be shot	1.5	0.5
Permit cost is too high	0.5	0
Other	21.4	15.2

*Percentages total more than 100% because respondents could check more than 1 reason.

Table A-2. Changes to the DMP system suggested by respondents.

<u>Suggested changes to DMP system</u>	<u>% of respondents who suggested a change (n=262)</u>
Reduce the number of permits issued	16.0
Shorten the season	10.3
Preference should be given to farmers, local residents, or retired people	9.5
Change the size of DMUs	6.9
Verify population size/current estimates inaccurate	5.3
Larger party size	4.6
Need more permits issued	4.2
Need more regulation of permits	4.2
Lengthen the season	3.4
Establish minimum size limit for deer	3.1
Rotation system or first come first serve, not lottery	3.1
Permit for bucks only	2.7
One person/permit	2.7
Archers should be allowed another deer permit	1.9
Permit for does only	1.9
Permits should be free	1.9
Simplify application process	1.5
Don't issue permits every year	1.1
Less restrictions, better explanations	1.1
Recall permits at end of season, so more information for DEC	1.1
Extend permits to NZ	0.8
Increase permit fee	0.8
Preference should be given to successful hunters, so more deer will be killed	0.4